

AS
CH

a vapor valve spring urging said vapor valve toward
said second position and, in said first condition of said
breakaway assembly, said vapor valve being urged toward said
first position,

whereby, during normal operation, the first and second body portions are secured together by the securement element, and the first and second fuel valves and the vapor valve are all urged toward their respective first (open) positions, and, upon application to the hose of tension above a predetermined maximum level, the securement element releases, allowing the first and second body portions to separate, and allowing the first and second fuel valves to move toward their second (closed) positions to cease flow of fuel from both body portions and further allowing the vapor valve to move toward its second (closed) position to cease vacuum flow through the first body portion.--

Kindly cancel claims 13 and 14, without prejudice.

In claim 15, at line 1, change "13" to --9--.

Remarks

Claim 1 has been amended to include all of the limitations of claims 5 and 6 (which have been cancelled from the application). Similarly, claim 9 has been amended to include all of the limitations of claims 13 and 14 (which have also been cancelled from the application). As a result, the rejections under 35 USC §103 on the basis of Podgers U.S. 4,899,792 taken alone and on the basis of Makishima U.S. 5,014,743 in view of Podgers '792 are moot, since those rejections were not addressed to claims 5/13 and 6/14 nor to claim 6/14, respectively.

The sole ground for rejection remaining to be addressed is the rejection under 35 USC §103 on the basis of Smith CA 616,242 in view of Podgers '792. This grounds for rejection is respectfully traversed.

Applicant's invention, as now more clearly claimed, is a breakaway assembly for use in combination with a fuel dispenser apparatus having a fuel dispenser unit and a coaxial hose terminating in a fuel delivery nozzle, the hose defining an outer fuel conduit for delivery of fuel from the dispenser unit to the nozzle, for filling a vehicle tank, and an inner vapor conduit, coaxial with the outer fuel conduit, for vacuum flow of vapor displaced from the vehicle tank.

According to the invention, the breakaway assembly, disposed between a first segment of the hose attached to the dispenser unit and a second segment of the hose terminating in the nozzle, has a first body portion attached to the first segment of the hose and a second body portion attached to the second segment of the hose. In a first, assembled condition of the breakaway assembly, the body portions are joined and together define both fuel and vapor conduits, respectively for flow of fuel and vacuum flow of vapor through the breakaway assembly. The breakaway assembly also has a second condition in which the body portions are separated. A securement element which secures together the body portions in the first condition is adapted to release engagement of the body portions upon application of tension force to the hose, across the breakaway assembly, above a predetermined maximum level. The breakaway assembly further

comprises fuel valves with corresponding operating springs that are set to their proper operating compression by assembly of the body portions, and a vapor valve that is opened indirectly by the same action, to permit fuel and vapor flow in the first condition.

During normal operation, the body portions are secured together by the securement element, and the fuel and vapor valves are all urged toward their respective open positions. Upon application to the hose of tension force above a predetermined maximum level, the securement element releases, allowing the body portions to separate, and allowing the fuel valves to move toward their closed positions to cease flow of fuel from both body portions and further allowing the vapor valve to move toward its closed position to cease vacuum flow through the first body portion.

None of the references cited by the Examiner, whether taken alone or in any proper combination, teaches or suggests Applicant's invention, as now more clearly claimed.

As acknowledged by the Examiner, Smith '242 fails to describe several important features of Applicant's invention, as now claimed. In particular, Smith '242 does not teach, nor suggest, a breakaway assembly for use in a fuel dispensing system disposed between sections of co-axial hose, which in a first condition defines conduits for flow of fuel and return vacuum flow of vapor, and which in a second condition, brought about by application of force across the assembly of a predetermined maximum level, separates to cease flow of fuel from both portions

and to cease vacuum flow into the vapor return conduit. Instead, Smith '242 describes a coupling with portions defining conduits for flow of incompressible fluid, fixedly secured together by a radially-actuated locking means, and terminating in an hollow end cap, for delivery of the fluid into a device such as a pump or turbine utilizing a pressure drop.

Podgers '792 similarly fails to provide important features of Applicant's invention lacking in Smith '242. In particular, Podgers '792 describes a fueling nozzle in which a combination breakaway-and-swivel coupling are rigidly attached to the fuel nozzle. As a result of this arrangement, the angular position of the hose relative to the nozzle is limited to the range of angular rotation provided by the swivel, i.e. approximately $\pm 30^\circ$. In situations of a vehicle "driving off" while the nozzle is still in place in the fill pipe opening, where the angle of the hose and nozzle is outside the range of the swivel, the breakaway assembly described by Podgers '792 would not be placed in pure tension, thus affecting adversely, i.e. increasing, the breakaway force above the predetermined level, potentially to the point of damage to other elements of the fueling system sought to be protected or damage to the environment.

In contrast, by Applicant's invention, the breakaway assembly is adapted to be positioned between two sections of coaxial hose. As a result, it is ensured that the breakaway assembly is under pure tension in any "drive-off" situation, and, therefore, that the securement element allows separation of the

body portion upon application of the predetermined maximum level of force, thus to protect the rest of the fuel dispensing system and to protect against spillage.

The Examiner suggests that it would be a "matter of expedient design" to mount the breakaway assembly of Podgers '792 in the manner now taught and claimed for Applicant's improved breakaway assembly. Furthermore, the Examiner suggests, as an additional step, that it would be obvious to substitute this feature, as well as the frangible coupling, in the self-sealing coupling taught by Smith '242. This, however, is not the proper test of obviousness under 35 USC §103, as there is no suggestion in either of the references for the proposed combination.

As the CAFC stated in ACS Hospital Systems Inc. v. Montefiore Hospital, 221 USPQ 929, 933 (1984):

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so.

Furthermore, in In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984), emphasis provided, citing In re Sernaker, 217 USPQ 1, 6-7 (Fed. Cir. 1983) and In re Imperato, 179 USPQ 730, 732 (CCPA 1973):

The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.

The proposed modification of the Smith '242 self sealing coupling to achieve Applicant's invention as claimed

would require wholesale redesign and reconstruction, and completely ignores the primary function of the coupling described by Smith '242. Wholesale redesign and reconstruction is not a proper ground for a rejection, as was made explicitly clear in In re Ratti, 123 USPQ 349, 352 (CCPA 1959):

We hold, further, that the combination of Jepson with Chinnery et al. is not a proper ground for rejection of the claims hereon appealed. This suggested combination of references would require a substantial reconstruction and design of the elements shown in Chinnery et al. as well as a change in the basic principals under which the Chinnery et al. construction was designed to operate. (emphasis ours)

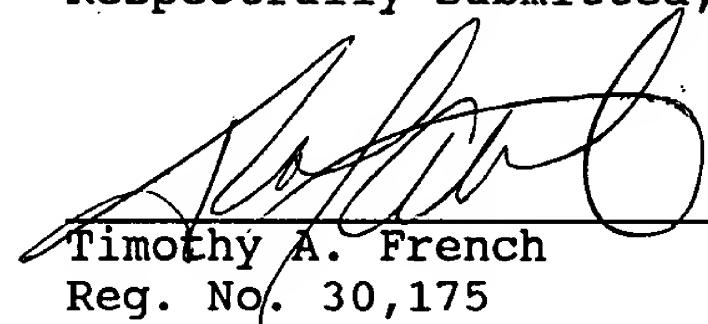
Furthermore, even if Smith '242 and Podgers '792 were combined and, again, there is no suggestion in any of the references of doing so, Applicant's device would not be achieved as none of the references alone or in combination, teaches or suggests the breakaway assembly of Applicant's invention with co-axial fuel and vacuum vapor return flow mounted between sections of co-axial hose and adapted, upon application of force of a predetermined maximum level, from any "drive-off" angle, to separate and cease flow of fuel and vacuum, thus to minimize spill of fuel from both ends of the hose, and to promptly secure the vacuum vapor return system.

In as much as there is no suggestion for combining the references in the manner proposed by the Examiner, and that such a combination, even if properly made, would not result in the invention as claimed, Applicant respectfully submits that the references do not support a prima facie case of obviousness under

the provisions of 35 USC §103. Therefore, Applicant respectfully contends that all of the claims remaining in this application (claims 1-4, 7-12 and 15-16) are patentably distinguishable over the prior art of record.

We submit, therefore that this application is now in condition for allowance, and early favorable action is solicited. Please charge any fees, or make any credits, to Deposit Account No. 06-1050.

Respectfully submitted,



Timothy A. French
Reg. No. 30,175

Date: September 16, 1993

Fish & Richardson
225 Franklin Street
Boston, MA 02110-2804

Telephone: 617/542-5070
Facsimile: 617/542-8906

49434.B11